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09/103,528 06/24/98 BENAZZI

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EXAMINER

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PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 18

Application Number: 09/103,528
Filing Date: June 24, 1998
Appellant(s): BENAZZI ET AL.

MAILED

JUN 05 2000

GROUP 1700

Harry Shubin
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed March 27, 2000.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 3, 4, 5, and 6 do not stand or fall with claims 1, 2 and 7-17 and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

A substantially correct copy of appealed claims 1-17 appears on pages A-1 to A-2 of the Appendix to the appellant's brief. The minor errors are as follows: in claim 12, "tot he" should be "to the" and the "\" at the end of the claim should be deleted.

(9) Prior Art of Record

| | | |
|-----------|--------------|--------|
| 4,537,754 | Casci et al. | 8-1985 |
| 4,954,243 | Kuehl et al. | 9-1990 |

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casci et al. (US Patent No. 4,537,754) in view of Kuehl et al. (US Patent No. 4,954,243).

Casci et al. discloses a zeolite designated EU-1 which has a Si/Al ratio of above 5 and as high as 250. See col. 12, line 7. The reference differs from the present claims by failing to disclose extracting at least 10% of T atoms.

Kuehl et al. discloses a method for extracting aluminum from zeolites by calcining (i.e., heat treating) a zeolite, and contacting the zeolite with an acid or chelating agent (for example EDTA). See the Abstract, col. 11, lines 44-65, and col. 13., line 10-16. The treatment results in removal of 10 to 90% of the aluminum from the zeolite. See col.12, lines 59-63.

Kuehl et al. does not specifically recite that its method is amenable with EU-1. However, Kuehl et al. discloses that its method can be performed on zeolites having a constraint index of 1 to 12. Kuehl et al. discloses that ZSM-23 has a constraint index of 9.1. See col. 5, line 34. Casci et al. discloses that EU-1 has a structure that is closely related to ZSM-23. See col. 2, line 64 to col. 3, line 7. Casci et al. analogizes the correlation to that of ZSM-5 and ZSM-11. Id.

Art Unit: 1755

ZSM-5 and ZSM-11 have similar constraint indexes. See col. 5, lines 25-26 of Kuehl et al.

Accordingly, since ZSM-23 has a constraint index of between 1 and 12, one of ordinary skill in the art would expect that EU-1 has a constraint index of between 1 to 12.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have dealuminated the zeolite disclosed by Casci et al. as suggested by Kuehl et al. because the dealumination process results in an increase in the acid activity of the resultant zeolite. See col. 2, lines 54-57.

The recitations of claims 11-17 can be found in Casci et al. at column 5, line 34 to column 6, line 2.

(11) Response to Argument

Appellants assert that Casci et al. fails to appreciate the unexpected results associated with removal of T atoms from zeolite EU-1. For this assertion, Appellants rely upon the second Declaration (Paper No. 11). The second Declaration shows that a dealuminated EU-1 having a Si/Al ratio of 59.7 has better catalytic dewaxing characteristics than an as-synthesized EU-1 having a Si/Al ratio of 60.5. However, for unexpected results to be persuasive, the results must be commensurate in scope with the claimed subject matter. See MPEP 716.02(d). The unexpected results proffered by Appellants are not commensurate in scope with the claimed invention for at least two reasons.

First, claim 1 is not limited as to Si/T ratio. For example, claim 1 encompasses zeolites having a Si/T ratio as low as 2 and as high as 10,000, and (attorney arguments aside) there is nothing of record to suggest that similar results occur over the entirety of the range.

Art Unit: 1755

Second, in claim 1, T may be any one of Al, Fe, Ga, or B. There is nothing of record to suggest that similar results occur when T is Fe, Ga or B.

Appellants further argue that even if combined, the references suggest dealuminating solely to increase the Si/Al ratio, and fail to recognize the alleged improvements that result from the removal of aluminum. However, merely recognizing an additional advantage which would flow naturally from the teachings of the prior art cannot be the basis for patentability. See MPEP 2145 II. As described above in the Grounds for Rejection, one of ordinary skill in the art would have been motivated to dealuminate the zeolite of Casci et al. The Appellants' claimed zeolite would flow naturally from following the teachings the applied references.

Appellants assert that the examiner has set up the assumption that dealuminated and as-synthesized zeolites would be the same. Appellants further argue that by submitting the second Declaration, the Appellants have disproved this assumption. These arguments are not relevant to the rejection that is on appeal. The examiner made the assumption that a dealuminated zeolite is the same as an as-synthesized zeolite in connection with a 102/103 rejection over Casci et al. alone. The rejection was made because instant claim 1 is a product-by-process claim, and it was unclear whether the product of Casci et al. was different from the product described by instant claim 1. The second Declaration successfully overcame this rejection. However, the rejection on appeal is over Casci et al. in view of Kuehl et al. The basis for this rejection is that the inventive zeolite would have been obvious because removal of T atoms results in an increase in the acid activity.

In the second to last paragraph on page 4 of Appellant's Brief, Appellants appear to argue that the narrower ranges of Si/T recited in claims 3-5 are patentable because these claims are

Art Unit: 1755

more commensurate in scope with the second Declaration than claim 1. However, the results shown in the second Declaration are not commensurate in scope with claims 3-5. The second Declaration shows one data point at a Si/Al ratio of 60.5. In contrast, claim 3 has no upper limit; claim 4 encompasses zeolites having a Si/T ratio between, for example, 2 and 600; and claim 5 encompasses zeolites having a ratio of between, for example 2 and 300. It is the examiner's position that the results at a Si/Al 60.5 are not commensurate in scope with these ranges.

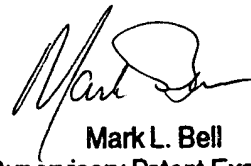
Appellants assert that similar results would have been expected for zeolites having elements other than Al as the T element. However, Appellants do not support this assertion with any evidence.

Lastly, Appellants assert that claim 6 is allowable because it limits T to aluminum. The examiner disagrees. Claim 6 is limited as to Si/Al ratio. However, as suggested previously, the results of the second Declaration are not commensurate in scope with claim 6 because claim 6 is not limited as to Si/T ratio.

Art Unit: 1755

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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May 31, 2000

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